

PATENT COOPERATION TREATY

REC'D 08 APR 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/B2005/050013

International filing date (day/month/year)
04.01.2005

Priority date (day/month/year)
08.01.2004

International Patent Classification (IPC) or both national classification and IPC
H04N7/26, H04N5/14

Applicant
KONINKLIJKE PHILIPS ELECTRONICS, N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and Industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Wahrenberg, A.

Telephone No. +31 70 340-4890



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050013

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
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International application No.
PCT/IB2005/050013

Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the International application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

1. The following document is referred to in this communication:
D1: Feng J et al: "Adaptive block matching motion estimation algorithm for video coding, IEE Electronics Letters, vol. 31, no. 18, 1995, pages 1542, 1543, XP6003304
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 discloses (the references in parentheses applying to this document):

A method for distributing candidate motion vectors (para. (ii) search range adaptation: the search range is determined, i.e. the number of candidate vectors is determined), the method comprising:

- dividing a picture frame into a plurality of pixel blocks (p. 1542, right-hand col., first 8 lines);
- measuring local motion complexity for each pixel block (para. (ii) search range adaptation); and
- assigning a number of candidate motion vectors to pixel blocks based on the measured local motion complexity (para. (ii) search range adaptation).

The subject-matter of claim 1 therefore differs from this known D1 in that the local motion complexity is measured in segments each consisting of a plurality of pixel blocks. In D1, the motion complexity is measured in smaller units, i.e. pixel blocks.

However, modifying the size of the processing grid (i.e. measuring complexity in bigger units), is for the skilled person a mere implementational detail, which he would carry out in accordance with the circumstances. Claim 1 is therefore not considered

as involving an inventive step.

3. The objection as to lack of inventive step, raised in respect of method claim 1, applies *mutatis mutandis* to the corresponding apparatus claim 7.
4. Dependent claims 2-6 and 8-12 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:
 - 4.1. The additional features of claims 2, 3, 6, 8, 9 and 12 seem to be anticipated by document D1 (see para. (ii) in particular).
 - 4.2. The additional features of claims 4, 5, 10 and 11 seem to relate to standard statistical measures, well-known to the person skilled in the art.

Re Item VIII.

Claim 1 relating to a method of distributing candidate motion vectors is not clear in the sense of Article 6 PCT, the reasons being as follows:

The mere distribution of candidate vectors among image segments does not, as such, provide any technical effect. The technical effect is only obtained in the motion estimation taking account of said candidate vector distribution. The description of the present application further indicates that the problem to be solved is to improve motion estimation (see page 2, lines 3-7 in particular). Thus, the vector distribution method being part of a method of motion estimation is clearly an essential feature and should therefore be present in independent claim 1 (see the PCT International Search and Preliminary Examination Guidelines, s. 5.33).

Additionally, the term "candidate motion vector", does not have a precise meaning in such generic context as that of claim 1. Said term does only have a recognised meaning in relation to motion estimation.

The above reasoning also applies *mutatis mutandis* to the corresponding apparatus claim

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/050013

7.

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INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/B2005/050013

Box No. V Reasoned statement under Rule 43b/s.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
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Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
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2. Citations and explanations

see separate sheet

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International application No.

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7.